WHAT IS CLAIMED IS:

1. A particle manipulation unit comprising a substrate, and a channel formed on said substrate, comprising a first channel and a second channel branched out from said first channel, capable of manipulating direction of flow of particles flowing in a liquid in said channel, further comprising

a permeation limiting zone limiting permeation of at least a part of said particles, disposed in said first channel in the vicinity of a branching point where one or more second channels are branched out from said first channel.

2. The particle manipulation unit according to Claim 1, wherein said permeation limiting zone has a plurality of obstacles arranged as being spaced from each other.

3. The particle manipulation unit according to Claim 2, wherein a gap between the adjacent obstacles is set to a size allowing a part of said particles to permeate therethrough.

4. The particle manipulation unit according to Claim 2 or 3, wherein said obstacles are arranged so that direction of force causing flow of said particles lies non-normal to, or non-parallel with direction of arrangement of said obstacles at the front-most plane on the branching point side of said permeation limiting zone.

5. The particle manipulation unit according to any one of Claims

2 to 4, wherein said plurality of obstacles are configured so as to control direction of flow of said particles, and so as to guide at least a part of said particles to either of said first channel and said second channel, depending on the arrangement thereof.

6. The particle manipulation unit according to any one of Claims 2 to 5, wherein said obstacles are periodically arranged in a two-dimensional manner.

7. A particle manipulation unit comprising a substrate, and a channel formed on said substrate, comprising a main channel, and one or more side channels branched out from said main channel towards the downstream side of said main channel, capable of manipulating direction of flow of particles flowing in a liquid in said channel, further comprising

a flow control portion disposed on the upstream side of a branching point where one or more side channels are branched out from said main channel,

said flow control portion controlling direction of flow of said particles, and guiding at least a part of said particles to either of said main channel and said side channel.

8. The particle manipulation unit according to Claim 7, wherein said flow control portion has a plurality of obstacles, said plurality of obstacles being configured so as to control direction of flow of said particles, and so as to guide at least a part of said particles to either of said main channel and said side channels, depending on

the arrangement thereof.

9. The particle manipulation unit according to Claim 7 or Claim 8, wherein said flow control portion has said plurality of obstacles periodically arranged.

10. The particle manipulation unit according to Claim 9, wherein a gap between the adjacent obstacles of said flow control portion in the direction of formation of said main channel differs from that in the direction of formation of said side channel.

11. A particle manipulation unit comprising a substrate, and a channel formed on said substrate, capable of manipulating state of flow of particles flowing in said channel, said channel having a flow control portion which comprises trenches formed on the wall surface of said channel, guiding at least a part of said particles to a predetermined direction.

12. The particle manipulation unit according to Claim 11, having a flow control portion which comprises trenches periodically formed on the wall surface of said channel.

13. The particle manipulation unit according to Claim 12, wherein said flow control portion comprises a plurality of periodic patterns which differ in geometry of opening of said trenches or pitch of said trench.

14. The particle manipulation unit according to Claim 13, wherein said plurality of periodic patterns are formed with mirror symmetry in said flow control portion.

15. A particle manipulation unit comprising a substrate, and a channel formed on said substrate, capable of manipulating direction of flow of particles flowing in said channel,

said channel having, provided thereto, a permeation limiting zone limiting permeation therethrough of at least a part of said particles,

said permeation limiting zone having a width of entrance narrower than the width of said permeation limiting zone,

having a first drive means providing said particle flowing in said permeation limiting zone with a migration speed in one direction, and a second drive means providing a migration speed in other direction different from said one direction, and

said permeation limiting zone being provided with a plurality of obstacles arranged as being spaced from each other.

16. The particle manipulation unit according to any one of Claims 1 to 15, wherein said particles contain any one of polymer resin, metal, semiconductor and biological molecules.

17. The particle manipulation unit according to any one of Claims 1 to 16, having a function of separating said particles depending on their sizes.

18. The particle manipulation unit according to any one of Claims 1 to 17, having a function of introducing a suspension, having said particles suspended therein, into said channel and diluting said suspension.

19. The particle manipulation unit according to any one of Claims 1 to 17, having a function of introducing a suspension, having said particles suspended therein, into said channel and desalting said suspension.

20. A chip having the particle manipulation unit described in any one of Claims 1 to 19.

21. A detection device comprising said chip described in Claim 20 and a detection unit for said particles.

22. The detection device according to Claim 21, wherein said detection unit for said particles is configured by a mass spectroscope.

23. A method of separating proteins comprising two or more process steps respectively using separation means differing from each other,

having, as one of said process steps separating proteins, a process step separating proteins using a chip having at least a function of continuously separating proteins.

24. A method of separating proteins comprising two or more process

steps respectively using separation means differing from each other,

having, as one of said process steps separating proteins, a process step roughly separating proteins using a chip described in Claim 20.

25. A method of detecting proteins in which proteins are separated by the method of separating proteins described in Claim 23 or Claim 24, the separated proteins are decomposed by protease treatment, and the decomposed products are identified using a mass spectroscope.

26. A method of capturing proteins in which proteins are separated using the chip described in Claim 20, and a target protein is captured from a suspension of a plurality of proteins, making use of affinity.

27. A method of detecting proteins in which the target protein is captured by the method of capturing proteins described in Claim 26, the surface of the chip is washed, and the captured protein is identified using a mass spectroscope.